

0043678

9304L213-WES-H3T
1121

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE



Client : WESTINGHOUSE HANFORD
RFW# : 9304L213

W.O. #: 06168-002-001-9999-00
Date Received: 04-15-93

INORGANIC

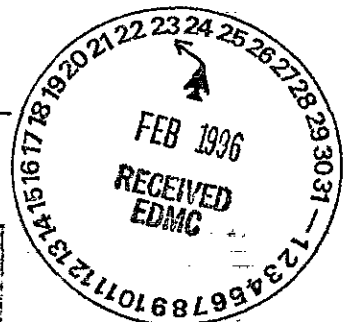
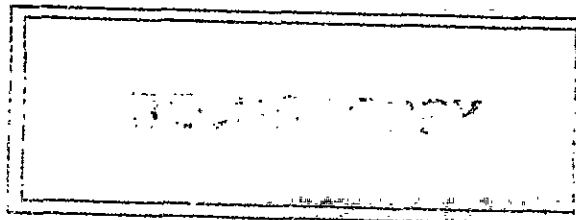
The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by 40CFR136 were met.
2. All preparation blank results were below the required detection limits.
3. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
4. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.
5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
6. The analytical methods applied by the laboratory, unless otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), Standard Methods for the Examination of Water and Wastewater 16 ed, and Test Methods for Evaluating Solid Waste (USEPA SW846).

Margaret M. Beatty
J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

mmz/i04-213

4/22/93
Date



0001

DON'T SAY IT --- Write It!

DATE: February 8, 1994

TO: 9304L213-WES-1131

FROM: Pat Reich

H4-19

Telephone: 372-2785

CC:

SUBJECT: *Final Summary*
DATA VALIDATION REPORT FOR THE 100-IU-4 SODIUM DICHROMATE ERA INV.

THE VALIDATION REPORT FOR THIS DATA PACKAGE IS FILED IN B01971-TMA-454.

PAT REICH
FILE CLERK

ROY F. WESTON INC.



INORGANIC DATA SUMMARY REPORT 04/21/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L213

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
=====	=====	=====	=====	=====	=====
-001	BO19B0	% Solids	89.2	%	0.10
		Chromium VI	0.11	u MG/KG	0.11

0004

FORM OF PAYMENT		930423		SERVICES **		INTERNATIONAL	
Check <input type="checkbox"/> <input type="checkbox"/>		FCCOD <input type="checkbox"/>		UNITED STATES / CANADA <input type="checkbox"/> Same Day (Extra Charges) <input type="checkbox"/> Standard Plus <input type="checkbox"/> AM <input type="checkbox"/> PM Preferred <input type="checkbox"/> Second Day <input type="checkbox"/> Saturday Delivery		Express <input type="checkbox"/> <input type="checkbox"/> Business Documents <input type="checkbox"/> Customs Clearance <input type="checkbox"/> Delivery <input type="checkbox"/>	
Bill to Shipper <input checked="" type="checkbox"/> <input type="checkbox"/> to Consignee <input type="checkbox"/> Third Party Billing <input type="checkbox"/>		 		Date 4/14/93 Origin PSC Shipment Number 253695494 8			
Shipper's Account Number E 850281585							
From: WESTINGHOUSE SHIPPING DEPT. (509) 376-6665 U.S. DEPARTMENT OF ENERGY C/O WESTINGHOUSE HANFORD BLDG 1163 2355 STEVENS DRIVE RICHLAND WA		To: JOSIE KING DE WESTON INC 256 WELSH POOL ROAD LIONVILLE PA		Tariff Dest. <input type="checkbox"/> Gateway <input type="checkbox"/>		Check to Shipper \$ <input type="checkbox"/>	
Customer's Reference Numbers PE52L 12911 W93-0-0403#18		99352		Consignee's Account Number E 19341		EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.	
Description 1 COOLER SML 45, SAMPLES #B01980		Dimensions Pcs 1 L 24 W 16 H 1		Total Weight (in Lbs) 291bs		FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)	
Remarks OVERNIGHT DELIVERY		Zip Ship <input type="checkbox"/>		Mark if Emery Packaging is used Urgent Letter <input type="checkbox"/> Urgent Pack <input type="checkbox"/>		Declared Value 2536954948	
Shipper's Signature <i>[Signature]</i>		Third Party Account Number E		International Shipments Free Domicile <input type="checkbox"/>		International Customs Value 3-PHE-A	
Base Charge 0000		Total Transportation Charges 0000		Other Charges/Advance of Ocean <input type="checkbox"/> \$		Terms and Conditions on Back	

Custody Tr

Custody Transfer Record/Lab Work Request

100

[illegible]

Westinghouse
Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator S.M. STEELE / H.L. STEELE

4/14/93

Company Contact R.C. SMITH/C.E. HEIDEN

Telephone 509-376-2640

Project Designation/Sampling Locations SAF#93-045, ERA, SODIUM
DICHROMATE SITE

Collection Date 4/13/93

Ice Chest No. SML 45

Field Logbook No. WHC-N-205-22

Bill of Lading/Airbill No. 253 695 4948

Offsite Property No. N/A

Method of Shipment AIR EXPRESS OVERNIGHT

Shipped to R.F. WESTON LABS, LIONVILLE PA.

Possible Sample Hazards/Remarks HAZARDS UNKNOWN, PRIORITY TURNAROUND, RCRA PROTOCOL, SEE SAMPLE
ANALYSIS REQUEST FOR INDIVIDUAL BOTTLES AND ANALYSIS.

Sample Identification

B019B0 (3) BOTTLES

Mon 4-14-93
PRIORITY TURNAROUND

Field Transfer of Custody		Chain of Possession		(Sign and Print Names)	
Relinquished By	Date	Time	Received By	Date	Time
<i>William C. Lyster S.H. Steele</i>	<i>4-14-93</i>	<i>0900</i>			
<i>EMERY</i>	<i>4/15/93</i>	<i>1125</i>	<i>Susan Peters</i>	<i>4/15/93</i>	<i>1125</i>
Final Sample Disposition					
Disposal Method:		Disposed by:		Date/Time:	
Comments:					

424613

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
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PART I - TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
The following items are to be shipped from <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Vendor		
Routing <input type="checkbox"/> Contractor <input type="checkbox"/> Vendor		
Shipped to	Off-site Custodian	
	Full Title	
Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	POLYCARBON. SAMPLES ARE DOUBLE BAGGED AND PACKED ON ICE. SAMPLE # 001990	
<input type="checkbox"/> Classified <input type="checkbox"/> Unclassified <input type="checkbox"/> Shipped Under DOE Contract <input type="checkbox"/> Shipped Under Contractor's Use Permit Contract		

Necessity for the Off-Site Use of this Property

SAMPLES REQUIRE ANALYSIS WHICH ARE NOT CURRENTLY AVAILABLE AT THIS SITE.

SAC # 93-745

DOC # 004142

BILL OF LADING # 226754242

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No	Date
Location of Property (Area & Bldg.) 2025/200W	Contact S.M. STEELE	Phone 373-7500
Date Ready for Shipment 4/14/93	Cost Code to be Charged PE52L org code: 12911	Approximate Date This Property will be Returned n/a
Originated By M.L. MYERS	Date 4/14/93	Authorized By J. HYATT
Signature and Name of Property Control	Custodian Date	Property Management Approval
		Date

PART II - TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No	Date Issued	Purchase Order No.	Date Issued
Date				

DISTRIBUTION

By Originator White, Green, Yellow, Pink - Property Management Goldenrod - Retain	Shipping Operation - Sign all Copies and Forward to: White - Property Management Yellow - Retain Green - Property Control Custodian (Issuing Office) Pink - Originator
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ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RWF #: 9304L213

W.O. #: 06168-002-001-9999-00
Date Received: 04-15-93

CLP METALS

1. This narrative covers the analysis of (1) soil sample.
2. The samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.
3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.
4. All analyses were performed within the required holding times.
5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.
7. All Preparation/Method Blanks were below Reporting Limits.
8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.
9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.
10. All Serial Dilution percent differences were within USEPA SOW control limits except for:

<u>RFW #</u>	<u>Element</u>	<u>%Difference</u>
001	Zinc	91.9

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more) except for:

<u>RFW #</u>	<u>Element</u>	<u>%Recovery</u>
001	Lead	64.4



A Post-Matrix Spike analysis was performed for those ICP elements that did not meet the specified control limits (exception allowed for Ag).

Matrix spike analyses are not required for Ca, Mg, Na, K, Al and Fe in soils.

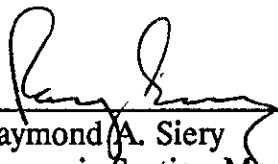
12. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit.

13. Method of Standard Additions (MSA) analyses were performed on the following samples:

<u>Element</u>	<u>Sample #'s</u>
Lead	001,001R

14. ICP Interelement Correction Factors for IC1 and IC3 are included in this package, but do not appear on EDD.

15. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.



Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

4.29.93
Date



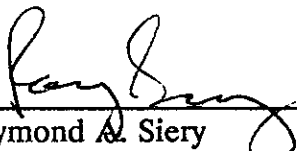
ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9304L213

W.O. #: 06168-002-001-9999-00
Date Received: 04-15-93

CLP METALS ADDENDUM

1. Following Exhibit E, Section V, Item 10, page E-23 of the USEPA Statement of Work for Inorganics Analysis, Document Number ILM02.0 ICP Instrument Detection Limits (IDLs) are reported for two (2) ICP instruments. The instrument identification numbers are "IC1" and "IC3". The highest IDL for the two instruments is used for reporting concentration values in this sample data package.
2. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.



Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

4.29.93
Date

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/27/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L213

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO19B0	Silver, Total	2.2	u MG/KG	2.2
		Aluminum, Total	7530	MG/KG	44.8
		Arsenic, Total	2.2	u MG/KG	2.2
		Barium, Total	82.3	MG/KG	44.8
		Beryllium, Total	1.1	u MG/KG	1.1
		Calcium, Total	4030	MG/KG	1120
		Cadmium, Total	1.1	u MG/KG	1.1
		Cobalt, Total	11.4	MG/KG	11.2
		Chromium, Total	32.3	MG/KG	2.2
		Copper, Total	11.8	MG/KG	5.6
		Iron, Total	20200	MG/KG	22.4
		Potassium, Total	2120	MG/KG	1120
		Magnesium, Total	4730	MG/KG	1120
		Manganese, Total	335	MG/KG	3.4
		Sodium, Total	1120	u MG/KG	1120
		Nickel, Total	13.7	MG/KG	9.0
		Lead, Total	5.0	MG/KG	0.67
		Antimony, Total	13.5	u MG/KG	13.5
		Selenium, Total	1.1	u MG/KG	1.1
		Thallium, Total	2.2	u MG/KG	2.2
		Vanadium, Total	34.4	MG/KG	11.2
		Zinc, Total	46.0	MG/KG	4.5

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

BO19B0

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP213

Matrix (soil/water): SOIL

Lab Sample ID: 930421301

Level (low/med): LOW

Date Received: 4/15/93

% Solids: 89.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7530.00	---		P
7440-36-0	Antimony	8.97	U		P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	82.30			P
7440-41-7	Beryllium	.47	B		P
7440-43-9	Cadmium	1.12	U		P
7440-70-2	Calcium	4030.00			P
7440-47-3	Chromium	32.30			P
7440-48-4	Cobalt	11.40			P
7440-50-8	Copper	11.80			P
7439-89-6	Iron	20200.00			P
7439-92-1	Lead	5.00		NS	F
7439-95-4	Magnesium	4730.00			P
7439-96-5	Manganese	335.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	13.70			P
7440-09-7	Potassium	2120.00			P
7782-49-2	Selenium	.45	U	W	F
7440-22-4	Silver	2.02	U		P
7440-23-5	Sodium	169.00	B		P
7440-28-0	Thallium	1.12	U		F
7440-62-2	Vanadium	34.40			P
7440-66-6	Zinc	46.00		E	P
	Cyanide				NR

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts:

Comments:

9304L213-WES-1121

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/21/93

Page
114194

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L213

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO19B0	% Solids	89.2	%	0.10
		Chromium VI	0.11	µJ MG/KG	0.11

DO NOT PREPARE
% Solids =
240%

0004

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

BO19B0

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP213

Matrix (soil/water): SOIL

Lab Sample ID: 930421301

Level (low/med): LOW

Date Received: 4/15/93

% Solids: 89.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7530.00			P
7440-36-0	Antimony	5.4 8.97	U		P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	82.30			P
7440-41-7	Beryllium	.47	B		P
7440-43-9	Cadmium	0.45 1.12	U		P
7440-70-2	Calcium	4030.00			P
7440-47-3	Chromium	32.30			P
7440-48-4	Cobalt	11.40			P
7440-50-8	Copper	11.80			P
7439-89-6	Iron	20200.00			P
7439-92-1	Lead	5.00	J	NS	F
7439-95-4	Magnesium	4730.00			P
7439-96-5	Manganese	335.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	13.70			P
7440-09-7	Potassium	2120.00			P
7782-49-2	Selenium	0.22 1.45	U	W	F
7440-22-4	Silver	1.7 1.6 2.02	U		P
7440-23-5	Sodium	169.00	B		P
7440-28-0	Thallium	0.67 1.12	U		F
7440-62-2	Vanadium	34.40			P
7440-66-6	Zinc	46.00	I	E	P
	Cyanide				NR

1/5/94
PMD

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts:

Comments: